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SCHOOL DOCUMENT NO. 8—1904

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## BOSTON PUBLIC SCHOOLS

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## COURSE OF STUDY

FOR THE

# FREE EVENING INDUSTRIAL DRAWING SCHOOLS

INCLUDING LOCATION OF SCHOOLS AND  
GENERAL REGULATIONS

1904



BOSTON  
MUNICIPAL PRINTING OFFICE  
1904

IN SCHOOL COMMITTEE, BOSTON, June 28, 1904.

Adopted.

*Ordered*, That two thousand copies of the Course of Study for the Free Evening Industrial Drawing Schools be printed as a school document.

Attest:

THORNTON D. APOLLONIO  
*Secretary*.

W. H. D. 1904

# LOCATION OF SCHOOLS.

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The Free Evening Industrial Drawing Schools maintained by the City of Boston are six in number. These schools are free, all materials are furnished, and the instruction is planned to fit the needs of those who desire to study drawing and design as an aid in their daily occupation. Their locations and the course of instruction in each are as follows:

## CITY PROPER.

WARREN AVENUE. (Public Latin School-house.) Freehand Drawing and Clay Modeling. Three-year course in each subject.

SCHOOL OF DESIGN. (Public Latin School-house.) Principles of Design, Composition, and Color. Preparation of Designs for all branches of Industry. Three-year course is offered.

No. 147 COLUMBUS AVENUE. Machine and Architectural Drawing. Three-year course in each subject.

## CHARLESTOWN.

OLD CITY HALL. Freehand, Machine, Architectural, and Structural Drawing, and Ship Draughting. Three-year course in each subject.

## EAST BOSTON.

OLD HIGH SCHOOL-HOUSE. Paris and Meridian streets. Freehand, Machine, Architectural Drawing, and Ship Draughting. Three-year course in each subject.

## ROXBURY.

2307 WASHINGTON STREET. Freehand, Machine, Architectural, and Structural Drawing. Three-year course in each subject.

## GENERAL REGULATIONS.

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### TERM AND EXHIBITION.

The term of the Evening Drawing Schools begins on the second Monday in October and continues for sixty-six working nights. These schools will be open for the examination, registration, and classification of applicants for admission on the Monday, Wednesday, and Friday evenings, immediately preceding the opening of the term, when an exhibition of the student's work is also on view.

### SESSIONS.

The sessions in all schools begin at half-past seven o'clock and close at half-past nine o'clock. The school-rooms will be open and the teachers present fifteen minutes before the time for the session to begin. Sessions in the Warren Avenue, Columbus Avenue, Charlestown, East Boston, and Roxbury Schools are held on Monday, Wednesday, and Friday evenings. Sessions of the School of Design are held on Tuesday, Thursday, and Friday evenings. The Friday evening sessions of the School of Design are held at the Boston Public Library.

### ADMISSION.

No person will be admitted under the age of fifteen years, or at any time other than the beginning of the term, except by express permission of the principal of the school. Students are admitted to any First

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Year Class without examination. Students who can prove their ability to undertake advanced work are admitted to the Second or Third Year Classes. Ability to undertake work of advanced standing is determined by examination. All students are required to follow the course of study for the year and division to which they belong, and no other works but those regularly assigned are permitted to be done in the classes.

#### REGULARITY OF ATTENDANCE.

Students who fail in punctuality or regularity of attendance must expect to be dropped from the school, unless they furnish satisfactory reasons to the Principal thereof. In all cases of absence students should notify the Principal of the school, stating reasons for the same, and the length of time it will probably continue.

#### INSTRUMENTS AND SUPPLIES.

Instruments are loaned and necessary supplies furnished without expense to the pupils.

#### RATING OF WORKS.

Each drawing, or series of drawings, or example of modeling, when finished, will be rated and marked with the initials of the teacher of the class in which it was made ; passed upon by the Principal of the school, who will also place his initials upon it, thus becoming responsible for the original rating ; and when accepted by the Director of Drawing as being up to the general standard of all the Evening Schools, it will be stamped by him, thus becoming a part of the series representing the required number of points necessary for a certificate or diploma.

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In rating student's work the following marks are used with the meanings indicated :

- 1 = Excellent.
- 2 = Good.
- 3 = Passable.
- 4 = Unsatisfactory.
- 5 = Poor.
- 6 = Very poor.

#### RECORDS OF STUDENTS' WORK.

Records of works accepted, number of points attained toward the certificates or diplomas, examinations passed, and of certificates and diplomas awarded must be kept by the instructor of each class, and a general record of all the classes is required to be kept upon blanks furnished for that purpose, and in uniform style, under the direction of the Principal of each school. One copy of this record is to be retained in the school. One copy is to be filed with the Secretary of the School Committee to be preserved by him.

#### STUDENTS' DRAWINGS TO BE RESERVED.

The School Committee reserves the right to select and retain as city property certain drawings from every student's work each year of the three years' course of instruction. These drawings are used for purposes of record and exhibition, and to display from time to time in the different class-rooms as examples of students' work. Examples of students' work in modeling may be selected each year to be photographed or cast. The photographs or casts made from these selections will also be kept as city property, to be used for the same purposes as the selected drawings.

All class-room work is to be handed to the Principal and kept by him. No students' class work of any kind is to be taken from the class-room at any time previous to the general distribution of such work, unless by special permission of the Principal of the school.

#### CERTIFICATES AND DIPLOMAS.

Certain evenings during each year of the course are to be devoted to examinations, which shall count a regular number of points toward the certificates or diplomas.

Each first-year student who has attained the required number of points in his class will be entitled to a first-year certificate. Each student who has attained the number of points representing the full two years work, or its equivalent, will be entitled to a second-year certificate. Each student who has attained the number of points representing the full three years' work, or its equivalent, will be entitled to the diploma of the Free Evening Industrial Drawing School.

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## COURSES OF STUDY.

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### FREEHAND DRAWING.

*Warren Avenue School, Public Latin School-house, Warren Avenue, City Proper. Charlestown School, Old City Hall, Charlestown. East Boston School, Old High School-house, East Boston. Roxbury School, 2307 Washington Street, Roxbury.*

The course in freehand drawing covers three years' work, and aims to offer opportunities for thorough training, and the development of power in quick sketching and illustration. It is a course which should be of much value to the general student, of particular service to the photo-engraver, of assistance to the advertiser, and has in recent years been in considerable request by those engaged in millinery and costume design.

#### *First Year.*

Principles of freehand perspective. Studies of values and simple composition. Still life.

Light and shade drawing from ornament, still life, and the antique.

Drawing from the pose. Action studies. Elementary principles of pictorial composition.

Study of mediums, water colors, pen and ink, etc.

#### *Second Year.*

Still life, composition, and values.

Light and shade from the antique.

Drawing from the costume pose. Studies for costume and illustration.

Study of mediums, water color, oil, pen and ink, etc.

*Third Year.*

Still life, composition, and values.

Portrait study in light and shade.

Costume study for illustration.

Problems in different mediums; charcoal, monochrome, colored chalks, and pen and ink for the different processes of reproduction.

**DESIGN AND COMPOSITION.**

*School of Design, Public Latin School-house, Warren Avenue, City Proper.*

The School of Design offers special training in the study of the principles of design and composition, and technical methods in applied design. The three years' course is arranged to develop appreciation of the principles that govern good design and originality in their application to wall-paper, textiles, leaded glass, ceramics, furniture, ironwork, interior decoration, etc.

A feature of this course of design and composition is the opportunity which it offers to teachers to study the application of art instruction to manual training. Original designs applicable to whittling and bench work, for wood and leather carving, basketry and weaving may be sought and studied. Modeling of simple ornamental and useful objects may be undertaken, as well as the study of bent and wrought-iron designs.

*First Year.*

Principles of design. Theory and application.

Principles of composition. Original and research work.

Study of mediums, and materials.

*Second Year.*

Application of principles of design.

Principles of composition. Dark and light. Color.

Study of mediums and materials.

*Third Year.*

Practice in applied design.

Principles of construction and manufacture.

Application of mediums and materials.

**MODELING.**

*Warren Avenue School, Public Latin School-house,  
Warren Avenue, City Proper.*

The important part which modeling plays in the applied arts has led to especial provision at the Warren Avenue School for the conduct of classes in this subject.

The course of study covers a period of three years, and like the other courses in these schools is so arranged that beginners as well as advanced workers may find interesting fields for helpful training.

Three related divisions are offered. The first is planned for sculptors and stonecutters who desire to take up modeling to aid their profession, or to bring a greater feeling of plasticity into their work. A second division supplements the work of the free-hand drawing classes, and offers opportunities to teachers and advanced students to study modeling. The third division is arranged to meet the needs of students of applied design.

All pupils model from casts, plants, flat copies, or original designs; and study the principles of decoration as applied to stone, wood, and metal. Students studying in the third division are instructed in the

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designing and modeling of small objects, like candlesticks, drinking fountains, vases, clock-cases, ink-stands, tablets, and the like, which are of a character to be cast in metal.

#### ARCHITECTURAL DRAWING.

*Columbus Avenue School, 147 Columbus Avenue, City Proper. Charlestown School, Old City Hall, Charlestown. East Boston School, Old High School-house, East Boston. Roxbury School, 2307 Washington Street, Roxbury.*

The course in architectural drawing, covering a period of three years, aims to train artisans to make and read examples of architectural draughting. It also offers to the architectural draughtsman the opportunity to pursue advanced study in architectural design, in sketching and rendering, and the making of perspectives from plans and elevations.

#### *First Year.*

Making working drawings of simple models. Use of instruments. Views, sections, developments, dimensions, and lettering.

Working drawings of architectural details.

Plans, elevations, framing plans, details of ordinary frame, brick, or stone construction.

Tracing, lettering, and filing methods.

#### *Second Year.*

Problems in descriptive geometry. Intersections and developments.

Architectural perspective.

Doors, windows, balustrades, arches, and arcades.

Forms and proportions of the orders.

Architectural design.

Lettering.

*Third Year.*

Advanced problems in descriptive geometry.

Projection of shadows.

Advanced architectural design.

Problems in plans and elevations.

Rendering in pencil, pen and ink, and water color.

Students who desire may undertake an outline study of the history of architecture by a course of talks, readings, and the preparation of reports upon assigned topics. Such papers, illustrated by notes, sketches, and tracings, become of particular value to the student.

**MACHINE DRAWING.**

*Columbus Avenue School, 147 Columbus Avenue, City Proper. Charlestown School, Old City Hall, Charlestown. East Boston School, Old High School-house, East Boston. Roxbury School, 2307 Washington Street, Roxbury.*

The course in machine drawing, covering a period of three years, aims to train artisans to make and read examples of machine draughting. It also offers to the machine draughtsman the opportunity to pursue advanced study in machine design.

*First Year.*

Making working drawings of simple models. Use of instruments. Views, sections, developments, dimensions, and lettering.

Working drawings of machine details.

Shop drawings of some machine. Sketches, arrangements of views, details, dimensions, and finishing instructions.

Tracing, lettering, and filing methods.

*Second Year.*

Problems in descriptive geometry. Intersections and developments.

Principles of crank, cam, and gear design.

Shop drawings of some machine from measurement. Details, dimensions, and finishing instructions. Assembly drawing from the details.

Tracing, lettering, and filing methods.

*Third Year.*

Advanced problems in descriptive geometry. Intersections and development.

Principles of machine design. Steam-engine, boiler, and dynamo construction.

Shop construction and arrangement.

**STRUCTURAL DRAWING.**

*Charlestown School, Old City Hall, Charlestown.*

*Roxbury School, 2307 Washington Street, Roxbury.*

The extended use of steel construction in architectural and engineering projects requires a knowledge of this subject upon the part of the artisan and draughtsman. Courses in structural drawing are offered at the Charlestown and Roxbury schools.

*First Year.*

Making working drawings of simple models. Use of instruments. Views, sections, developments, dimensions and lettering.

Working drawings of structural details.

Detail drawings of floor framing for an office building.

Use of steel handbook, tracing, lettering, filing methods, and preparing bills of material.

*Second Year.*

Problems in descriptive geometry. Intersections and developments.

Strength of materials and design of riveted joints, gusset and splice-plates, and bearing surfaces.

Detail drawings of trusses, columns or girders of more complex type.

Methods of shopwork, template making, inspection and erection.

*Third Year.*

Advanced problems in descriptive geometry. Roofs, valley and hip intersections, etc.

Strength of materials; tension, compression, bending moment and shear. Stress diagrams for dead, wind, and snow loads on roof trusses.

Design and detail drawings of one of the following structures: Roof of a power-house, with bracing, tie rods and anchorage.

Steel mill building. Simple riveted or pin connected bridge.

Shop marking and construction lists. Taking off quantities for estimates of cost.

## SHIP DRAUGHTING.

*East Boston School, Old High School-house.*

*East Boston.*

The importance of Boston as a seaport, as well as a home of ship building and repair, has led the Committee to maintain for many years a class in ship draughting and design. The course, which is three years long, carries the student to the point of understanding ship design and delineation, and fits him to perform the calculations incident to daily practice in marine construction.

*First Year.*

Working drawings of simple models.

Elements of projections, projection of points and lines, intersections of planes, traces, etc.

Practice in drawing a vessel. Use of instruments. Lines of the sheer, half-breadth, and body plans. Planes for correcting and harmonizing the system of lines. Ending of water lines, locating square stations, finding sections and diagonals.

*Second Year.*

Draughting complete plans of a vessel.

(a.) Sailing vessel. Hull, spar, and sail plans for the shipyard.

(b.) Steel vessel propelled by steam. Hull construction and details.

*Third Year.*

Sailing vessel (wood or steel). Design from given dimensions, displacement, etc.

(a.) Calculations for position of centers of buoyancy, heights of transverse center and metacenter, center of lateral resistance, position of center of effort of sails, etc.

(b.) Working sketches of selected features, complete sections of stem and stern post with attached work, sections of finished deck, interior of cabins, etc.

(c.) Tables of materials of construction with data for the yard.

(d.) Specifications.

















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